

REMARKS/ARGUMENTS

Claims 1-30 stand rejected under 35 U.S.C. 103 (a) as being unpatentable over U.S. Patent No. 6,643,269 (Fan et al.) in view of U.S. Patent Publication No. 2004/0190461 (Gullicksen et al.), in further view of U.S. Patent No. 6,188,675 (Casper et al.). Applicants respectfully request reconsideration of the rejection.

Fan et al. disclose a routing switch for automatically identifying network topology. Each node in a network transmits its unique address to its neighboring node. If a node receives a different message from its neighbor, the node identifies a topology change in the network. In response to the topology change, the nodes in the network modify routing tables and other information stored at the node related to the topology. As shown in Fig. 1, the network may have a ring topology. Fan et al. are concerned with providing a dual addressing mechanism for use as a general topology discovery mechanism. The mechanism utilizes a session identifier that devices in the network place on all neighbor status messages. The detection of an incremented session number signals to other devices that a new round of topology discovery has started.

As noted by the Examiner, Fan et al. do not show or suggest polarity state information. As set forth in the specification of the present application, polarity identifies the different rings in a dual ring network. Fan et al. describe how to detect general topology changes such as deletion or addition of nodes or circuits, but do not address sending or receiving any polarity information. Fan et al. are not concerned with distinguishing between two rings.

Gullicksen et al. disclose a virtual line switched ring connection state distribution scheme. Each node in a system maintains connection table and topology tables for each node and each ring within a ring network. A CSDP manager generates a configuration message, which is transmitted around a ring so that the other nodes can update their topology table. The message may include a ring ID, node ID, and east line and west line values. The CSDP manager may also generate a query message used to request the latest

configuration state or connection state information from one or more nodes. Gullicksen et al. do not show or suggest receiving ring connection polarity information from an adjacent node and an indication whether said ring connection state is fixed or floating. The west and east line values represent the number of working lines on each span. The west and east line info represents the number of line timeslots for the west and east working lines. This information is used to update a topology table maintained by each node in the network.

As noted by the Examiner, Fan et al. and Gullicksen do not disclose a floating polarity state. As defined in the specification, a node is considered to be in a floating state if it has not yet adapted the actual network polarity. A node is in a fixed state once it acquires the correct polarity.

Casper et al. disclose a system and method for self-identifying and configuring the nodes of a network. A node address indicator is designated for insertion in a packet to be sent from a node with a known address to an adjacent node with unknown address. Provisions for identifying node additions and deletions are provided. Progressive identification of the network is performed by allowing interrogation of next adjacent network nodes. Network topology is discovered by identifying the network node by node.

There is no disclosure in Casper et al. of receiving an indication whether a ring connection polarity state is fixed or floating. As discussed above, fixed or floating refers to whether the node has the correct network polarity. There is no disclosure of identifying or obtaining polarity information in Casper et al. In fact, Casper et al. do not show or describe a dual ring network, thus, there is no reason to indicate polarity.

Moreover, Casper et al. do not even show or suggest receiving an indication whether a network topology is known or unknown, as suggested by the Examiner. A node, such as a managing node, is sent to a node with an unknown address. Upon receipt of the packet, the unknown node is initialized. The progressive identifying of the network topology is performed by always sending out packets from a node with a known address to nodes with an unknown address. Thus, when a packet is received at an adjacent known, there is no question as to whether the address is known or unknown at the adjacent node sending the packet.

Furthermore, none of the cited references show or suggest adopting a ring connection polarity state of an adjacent node if a ring connection polarity state configured at the adjacent node is fixed, as set forth in claim 1.

Accordingly, claim 1 is submitted as patentable over Fan et al., Gullicksen et al., and Casper et al. Claims 2-7 and 29-30, depending either directly or indirectly from claim 1, are submitted as patentable for at least the reasons discussed above with respect to claim 1.

Claims 8 and 15 are directed to an apparatus and claim 22 is directed to a computer program product for operating or configuring a network node that is connected in a dual ring, and are submitted as patentable for the reasons discussed above with respect to claim 1.

Claims 9-14, depending from claim 8, claims 16-21, depending from claim 15, and claims 23-28, depending from claim 22, are also submitted as nonobvious over the prior art of record for the same reasons as claims 8, 15, and 22, respectively.

Claims 2, 9, and 16 are further submitted as patentable because the prior art does not show or suggest transmitting ring connection polarity information to a second adjacent node including the adopted ring connection polarity state and an indication that the adopted ring connection polarity state is fixed if the ring connection polarity state configured at the first adjacent node is fixed. In rejecting claim 2, the Examiner simply states that Fan discloses each network node transmitting a message address to its neighboring node and topology information being propagated to other nodes in the network.

With respect to claims 3, 4, 10, 11, 17, 18, 24, and 25 neither Fan et al. nor Casper et al. show or suggest adopting a default ring connection polarity state if a ring connection polarity state at a first adjacent node is floating. As noted by the Examiner, Casper et al. merely disclose sending a message to an adjacent node having an unknown network address. The unknown node returns a message containing its address. The system would not work if a default value was applied for the nodes having an unknown address.

Claims 7, 14, 21, and 28 are further submitted as patentable over Fan et al. and Casper et al., which do not show or suggest receiving a path trace message and extracting the ring connection polarity information from the path trace message. In rejecting claim 7, the Examiner identifies the session identifier of Fan et al. as a path trace message. The session identifier is placed by a device in a neighbor status message and is used to signal to other devices that a new round of topology discovery has started. The session identifier is not a path trace message, which as defined by the SONET standard, identifies the logical interface transmitting the message.

For the foregoing reasons, Applicants believe that all of the pending claims are in condition for allowance and should be passed to issue. If the Examiner feels that a telephone conference would in any way expedite prosecution of the application, please do not hesitate to call the undersigned at (408) 399-5608.

Respectfully submitted,



Cindy S. Kaplan
Reg. No. 40,043

P.O. Box 2448
Saratoga, CA 95070
Tel: 408-399-5608
Fax: 408-399-5609